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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM JONES, DENNIS STAMIREs,
PAUL O'CONNOR, and MICHAEL F. BRADY

Appeal 2010-002883
Application 10/582,593
Technology Center 1700

Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision¹ finally rejecting claims 1-6.² We have jurisdiction under 35 U.S.C. § 6(b).

Appellants request review of the following grounds of rejection (Br. 6³):

1. Claims 1-3 under 35 U.S.C. §103(a) as unpatentable over Frestad (US 4,975,406, issued Dec. 4, 1990) (Ans. 3);
2. Claims 1-3 and 6 under 35 U.S.C. §103(a) as unpatentable over Chin (US 4,921,824, issued May 1, 1990) (Ans. 4);
3. Claims 4 and 5 under 35 U.S.C. §103(a) as unpatentable over Chin in view of Kim (EP 0 554 968 A1, published Aug. 11, 1993) (Ans. 4-5); and
4. Claims 1-6 under 35 U.S.C. §103(a) as unpatentable over Kim in view of Chin (Ans. 5-7).

Appellants' arguments are directed to limitations in claims 1, 4, and 5⁴, which are reproduced below from the Claims Appendix to the Appeal Brief:

¹ Final Office Action mailed Mar. 27, 2009.

² Appeal Brief filed Aug. 21, 2009 ("Br. 6").

³ As explained on page 7 of the Examiner's Answer (mailed Oct. 1, 2009 ("Ans.")), the Examiner's decision to withdraw claims 7 and 8 from consideration pursuant to MPEP § 821.03 and 37 C.F.R. §1.142(b) is not appealable subject matter. 35 U.S.C. §§ 6(b) and 134(a) (2009); *see In re Hengehold*, 440 F.2d 1395, 1404 (CCPA 1971) (explaining that matters of a discretionary, procedural or nonsubstantive nature are not appealable to the Board when they are not directly connected with the merits of the issues involving rejection of claims).

⁴We do not view Appellants' statements with respect to claims 2 and 6 (*see* Br. 9-10, and 12) as arguments in support of separate patentability. *See* 37

1. Oxidic catalyst composition comprising 5-60 wt. % of a divalent metal, 5-60 wt. % of a trivalent metal and 40-55 wt% of a rare earth metal, calculated as oxide and based on the total weight of the oxidic catalyst composition.

4. Process for preparing an oxidic catalyst composition according to claim 1, which process involves forming a precipitate from a solution containing dissolved divalent, trivalent, and rare earth metal salts, followed by calcination of the precipitate obtained.

5. Process for preparing an oxidic catalyst composition according to claim 1, which process involves the calcination of a physical mixture of a divalent, a trivalent, and a rare earth metal source.

Having fully considered the respective positions of the Examiner and Appellants, including Appellants' evidence of unexpected results, we determine a preponderance of the evidence favors the Examiner's conclusion of obviousness. We sustain all four grounds of rejection based on the Examiner's fact finding and reasoning as set forth on pages 2-7 of the Final Office Action and pages 3-15 of the Answer, as discussed more fully below.

The first issue we consider is whether the Examiner established a *prima facie* case of obviousness with respect to each ground of rejection.

In cases involving overlapping ranges, [the Federal Circuit] and [its] predecessor court have consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness. .

C.F.R. § 41.37(c)(1)(vii) ("A statement which merely points out what a claim recites will not be considered an argument for separate patentability of the claim.").

. . . [The Federal Circuit has] also held that a *prima facie* case of obviousness exists when the claimed range and the prior art range do not overlap but are close enough such that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985).

In re Peterson, 315 F.3d 1325, 1329 (Fed. Cir. 2003).

Frestad

Appellants have not refuted the Examiner's finding that the composition of Frestad's distinct catalyst coating layer includes a divalent metal, a trivalent metal, and a rare earth metal in amounts which overlap those recited in appealed claim 1. (Ans. 7; *see* Br. 8-10.) Appellants have not persuasively explained why they believe the Examiner erred in reading the composition recited in appealed claim 1 on Frestad's catalyst coating layer alone (*see* Br. 8-10). Stated somewhat differently, Appellants have not identified, nor do we find, any basis in the claims or Specification which supports a narrow interpretation of appealed claim 1 as necessarily reading on both Frestad's distinct catalyst layer and the monolithic substrate on which the layer is coated, as opposed to reading on the distinct catalyst layer alone. (*See* Br. 9 (arguing that "when one compares the invention presently claimed to the amount of metals present in the invention of Frestad, based on the total composition instead of simply the coating, one can clearly see that there is no overlap with regards to the amount of rare earth metal or divalent metal").)

Chin

Appellants have not refuted the Examiner's finding that Chin's catalytic coating layer includes a divalent metal, a trivalent metal and a rare

earth metal in amounts which overlap those recited in appealed claim 1.
(*See* Ans. 11; Br. 10.)

Kim and Chin

Appellants concede that Kim discloses the calcination of a precipitate of a divalent metal and a trivalent metal in amounts which overlap those recited in appealed claim 1. (*See* Ans. 12; Br. 10-12; Spec. 1:10-12.) Appellants acknowledge Kim's precipitate includes a rare earth metal as claimed, but in an amount of 5-30%, which is lower than the claimed range of 40-55%. (*See* Ans. 12; Spec. 1:10-12.) Appellants have not refuted the Examiner's finding that a precipitate is a physical mixture as recited in appealed claim 5. (Ans. 12; *see* Br. 10-12.)

Appellants "acknowledge[] that the process of Kim could be used to make the composition of Chin, and [] ha[ve] not argued that the combination of the two references is improper for any reason." (Ans. 12; *see* Br. 11.)

Appellants have not explained why the Examiner erred in determining it would have been obvious to have increased the amount of rare earth metal in Kim's composition to within Appellants' claimed range (*see* Ans. 5-6) based on Chin's teaching that "[t]he amount of lanthanum and, optionally, other rare earth oxides in the discrete particles . . . is preferably at least about 50% . . . In general, the greater the amount of lanthanum in the discrete particle, the better the improvement in catalyst performance will be" (Ans. 9 (quoting Chin, col. 3, ll. 46-53); *see* Br. 10-12).

In sum, the unrefuted evidence supports the Examiner's determination that Frestad, Chin, and Kim in view of Chin suggest a composition as

claimed in claim 1 and that the combined teachings of Chin and Kim suggest a process as recited in claims 4 and 5. *See In re Peterson*, 315 F.3d at 1329.

Having determined the Examiner established a prima facie case of obviousness, the second issue we consider is whether Appellants' arguments in support of nonobviousness, taken together with the evidence of unexpected results in the Specification, outweigh the Examiner's evidence of obviousness.⁵

To demonstrate unexpected results, Appellants rely on several comparison examples, and a single example (Example 2) which falls within the scope of claim 1. (*See Spec. 10 Table.*) Appellants have not provided examples in which the rare earth was present in amounts of 40 and 55%, i.e., the lower and upper limits of the claim 1 range. (*See id.*)

According to the Specification, “[v]anadium causes the micropore volume of the zeolite Y to deteriorate. So, the better the vanadium passivating capacity of the sample, the higher the micropore volume of the zeolite that will be retained in this measurement.” (Spec. 10:3-5.) The Specification states that “a lanthanum content higher than 35 wt% results in an increased performance. A lanthanum content above 60 wt% does not increase the performance any further and only makes the compositions more expensive and denser.” (Spec. 10:14-17.) Appellants' evidence shows that compositions comprising 50% and 65% by weight La_2O_3 performed equally in micropore volume retention of the zeolite Y. (*See Spec. 10 Table.*)

⁵ We note Appellants' reliance on unexpected results is limited to the rejections based on Chin (i.e., grounds of rejection 2-4). (*See Br. 10-12; Ans. 7.*)

In general, an applicant may overcome a *prima facie* case of obviousness by establishing “that the [claimed] range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range.” That same standard applies when . . . the applicant seeks to optimize certain variables by selecting narrow ranges from broader ranges disclosed in the prior art. Moreover, the applicant’s showing of unexpected results must be commensurate in scope with the claimed range.

Id. at 1330 (internal citations omitted). “[B]y definition, any superior property must be *unexpected* to be considered as evidence of non-obviousness.” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1371 (Fed. Cir. 2007).

Appellants have not demonstrated any criticality in the claimed range. As explained by the Examiner, Appellants have not provided examples which are commensurate in scope with the claimed range of 40-55%, and the Example 2 results

are not unexpected in view of Chin because the instantly disclosed examples show that the MiPV retention of the catalyst increases with increasing wt% La₂O₃ and Chin explicitly states “the greater the amount of lanthanum in the discrete particle, the better the improvement in catalyst performance will be,” which appears to be the case in the instantly disclosed examples.

(Ans. 10-11.)

In sum, based on the Examiner’s fact finding and reasoning, we determine that a preponderance of the evidence weighs in favor of the Examiner’s conclusion of obviousness. Accordingly, we sustain all four

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grounds of rejection. The Examiner's decision to reject claims 1-6 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED

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